NOAA FISHERIES

Northwest Fisheries Science Center

Overview of Recreational Fisheries Research and Data

Leif Anderson

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Goals, background

Provide data and analyses on the recreational fishing sector to PFMC, West Coast Regional Office, NMFS HQ, Puget Sound Partnership, WA Sea Grant, charter businesses, anglers, interested public

Federal laws mandate enumeration and minimization of adverse economic impacts (MSFCMA, NEPA, RFA, EO 12866)

Saltwater recreational fisheries primarily occur in non-federal waters

Managed by the states, inter-state coordination through Pacific States Marine Fisheries Commission. PFMC and NMFS manage fisheries in federal waters through four fishery management plans (coastal pelagic, groundfish, highly migratory, and salmon)

Estimated 2.1 million trips in WA and OR in 2015 (RecFIN / FEUS)

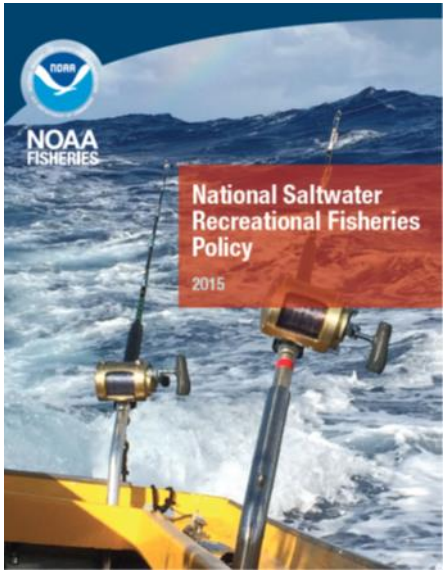
Major species group targets: salmon (coho, Chinook, etc), bottomfish (Pacific halibut, rockfish, lingcod, cabezon, etc), tuna (albacore)

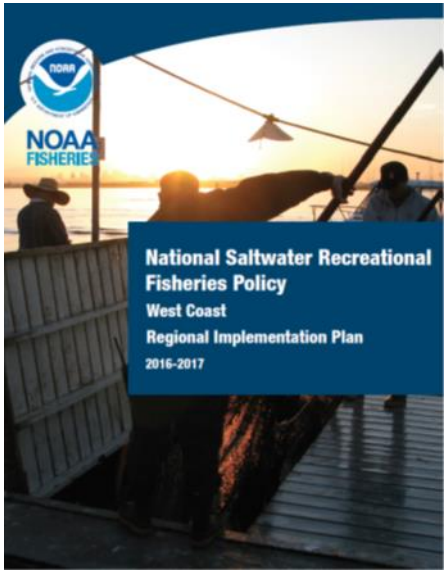
Goals, background

Research projects aligned with guiding principles identified in the National Saltwater Recreational Fisheries Policy

> "provide scientifically sound and trusted social, cultural, economic, and ecological information"

West Coast Implementation Plan outlines studies and actions intended to meet goals of Policy, including some NWFSC economic data collections and studies





External data sources

RecFIN / WA and OR sampling programs

- Ocean Recreational Boat Survey (OR boat-mode), Ocean Sampling Program (WA Ocean), Puget Sound Recreational Fishery Sampling (WA Puget Sound)
- catch and effort data

NMFS HQ Marine Rec Expenditure Survey

- durable good and trip components

Not well-suited to estimate recreational demand

- no econ add-on component (income, etc), little variation in some of the attributes of interest or management variables (e.g., bag limits) could be correlated with population size / catch rates

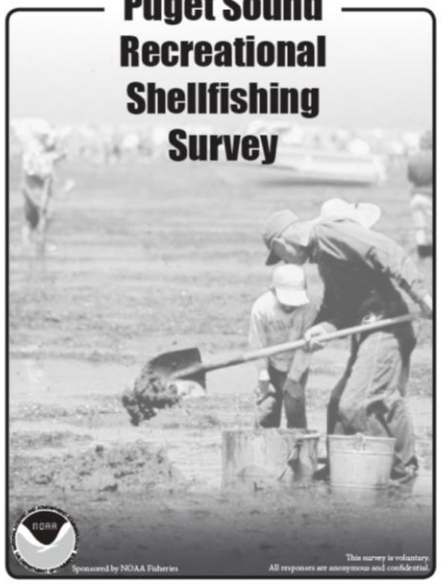
NWFSC recreational data collections

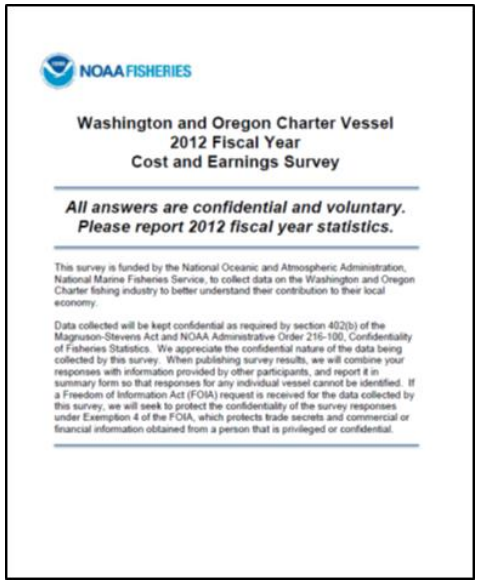
NWFSC recreational fisheries data collections are irregular

- no regular funding, although NMFS HQ has been *very* helpful funding survey efforts through their Econ RFP (thank you Rita Curtis!)

Voluntary

Each survey iteration requires approval under the Paperwork Reduction Act through OMB, focus groups, one-on-one verbal protocols

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Washington and Oregon Charter Vessel
2012 Fiscal Year
Cost and Earnings Survey

All answers are confidential and voluntary.
Please report 2012 fiscal year statistics.

This survey is funded by the National Oceanic and Atmospheric Administration, National Marine Fisheries Service, to collect data on the Washington and Oregon Charter fishing industry to better understand their contribution to their local economy.

Data collected will be kept confidential as required by section 402(b) of the Magnuson-Stevens Act and NOAA Administrative Order 216-100, Confidentiality of Fisheries Statistics. We appreciate the confidential nature of the data being collected by this survey. When publishing survey results, we will combine your responses with information provided by other participants, and report it in summary form so that responses for any individual vessel cannot be identified. If a Freedom of Information Act (FOIA) request is received for the data collected by this survey, we will seek to protect the confidentiality of the survey responses under Exemption 4 of the FOIA, which protects trade secrets and commercial or financial information obtained from a person that is privileged or confidential.

Data collections:
Washington / Oregon Saltwater Recreational Fishing Surveys

Discrete choice experiment including most commonly targeted saltwater species

Chinook salmon, coho salmon, Pacific halibut, rockfish, lingcod

Collected data from 2006-2007 from license holders, primarily through a mail survey, with a telephone screen to determine saltwater fishing

Data collected: past trips, expenditures, demographics, and fully ranked choices among fishing trips described by catch (by species and size), bag limits, and broad geographic area (Puget Sound, WA Ocean, OR Ocean)

Investigators: FRAM (PI: Todd Lee)

More info: Anderson, L.E., Lee, S.T., 2013a. Washington and Oregon Saltwater Sportfishing Surveys: Methodology and Results.

Data collections:
Puget Sound Recreational Shellfishing Survey

Contingent behavior survey of shellfish harvesters in Puget Sound

clams and oysters

Collected data from 2013 license holders, primarily a mail survey using a telephone screen to determine harvesting activity

Data collected: past trips, expenditures, demographics, and the stated number of harvesting trips under a series of season descriptions that varied the length and types of closures, as well as the distance to the nearest open harvesting beach

Investigators: CB and FRAM (PI: Anderson and Plummer)

More info: Anderson, L.E., Plummer, M.L., 2016. Puget Sound recreational shellfishing survey : methodology and results.

Data collections:
Recreational Charter Boat Operator Survey

Cost earnings survey of charter boat operators

Collected 2012 data from charter boat operators in WA and OR, primarily in person with a telephone screen to determine marine use

Data collected: detailed costs and earnings, business and trip characteristics, general concerns, economic outlook

Investigators: FRAM (PI: Leonard)

More info: Leonard, J.L., 2016. Washington and Oregon charter vessel survey : methodology and results.

Data collections:
In progress / planned soon

Updated saltwater finfish survey in progress now

- Investigators: FRAM and SWFSC (PI: Anderson and Hilger)
- 3 states
- Discrete choice experiment
- Focus groups completed, survey design and administration approved by OMB
- OR and WA species same as the 2007 survey *plus* albacore tuna

Freshwater hatchery and wild steelhead survey in progress soon

- Investigators: CB and FRAM division (PI: Fonner)

Analyses

Recreational trip demand:

Finfish, shellfish

Others:

Economic contributions

Bioeconomic model

Analyses:
Recreational fishing demand

Recreational demand for saltwater fishing in OR and WA saltwater

- Preferences for hatchery and wild salmon
  - Mixed logit model of rec demand, examines preferences for hatchery and wild salmon bag limits and catch rates
  - Integrated creel data to model probabilistically binding limits

  Anderson and Lee, 2013. MRE. 28(2): 175-97.

- Effects of current and potential future conservation closures for rockfish in Puget Sound
  - Mixed logit model of rec demand, exploring set of progressively more restrictive regulations (closures by species groups)
  - Results highlight importance of fishing opportunity

  Anderson, Lee, and Levin. LE, 2013. Land Econ. 89(2): 371-85.

- Link with food web model, eelgrass extent in Puget Sound
  - More broadly focused, but contained a recreational demand component
  - Value of increased eelgrass as translated through increased salmon catch rates

  Plummer et al., 2013. Ecosystems. 16: 237-51.

Analyses:
Shellfish harvesting demand, environmental closures

Rec demand for Puget Sound shellfish harvesting

- Effects of environmental closures
  - Will discuss this more in the following presentation as a spotlight

    Anderson and Plummer, 2017. MRE. 32(1): 43-57.

Analyses:
Economic contributions

Provide economic contributions of recreational fishing for biennial harvest specifications process of the Council, using the I-O PAC model

- Trip expenditures from NMFS HQ Marine Rec Expenditure Survey

Charter operator survey used to improve underlying assumptions in IMPLAN, refine default sector for charter industry

Analyses:
Bioeconomic model

Bioeconomic model of saltwater recreational fishing in Oregon and Washington

- In short, linking demand models estimated with choice experiment data to stock assessments for a handful of recreationally important species
- Will discuss this more later in this section – Josh Nowlis

Analyses:
Other ongoing recreational research

Discrete choice experiment of season characteristics (length, uncertainty, catch rates)

- Pacific halibut fishery in OR and red snapper fishery in FL
- Investigators: UW, NWFSC (PI: Ray Hilborn)
- Surveys administered by UW grad student

Questions?